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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PIERRE GLAESENER and HARALD KOLLMEIER

Appeal 2008-0901
Application 09/835,439
Technology Center 3600

Decided: May 19, 2008

Before: TERRY J. OWENS, HUBERT C. LORIN and STEVEN D.A. McCARTHY, *Administrative Patent Judges*.

McCARTHY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134 (2002) from the final rejection of claims 1, 7-11 and 27-35. We have jurisdiction under 35 U.S.C § 6(b) (2002).

The claims on appeal relate to a flexible shoe assembly of a type which might be used to slideably engage a tie bar in an injection molding system. (Spec. 5, ll. 29-31 and 7, ll. 26-28). Independent claim 1 is typical of the appealed claims and reads as follows:

> 1. A molding system flexible shoe assembly, comprising:
> a body for supporting a load; and
> a force redirector;
> said body having (i) an upper wearing surface configured to slideably engage a linearly moving complimentary [sic] surface of a supported member, and (ii) a lower mounting surface configured to engage a complementary surface within said molding system and providing positioning and adjustment of said shoe assembly during installation,
> said force redirector being disposed in said body in a plane below said upper wearing surface and configured to redirect said force from a leading edge and a trailing edge of said upper wearing surface to a central area in said body,
> said force redirector being disposed substantially perpendicular to the linear movement of said body.

Claims 1, 7-11 and 27-35 stand rejected under 35 U.S.C. § 103(a) (2002) as being unpatentable over Schlereth (U.S. Patent 5,176,454) in view of Osawa (U.S. Patent 4,941,758).[1]

[1] The Appellants also appealed the final rejection of claims 1, 7, 27, 28 30, 31 and 35 under 35 U.S.C. § 102(b) as being anticipated by Faint (U.S. Patent 4,759,452). (App. Br. 12). The Examiner's Answer withdrew this rejection. (Ans. 2).

We AFFIRM the rejection of claims 1, 7-11 and 27-34. We REVERSE the rejection of claim 35.

ISSUES

The primary issue in this appeal is whether the teachings of Schlereth and Osawa may be combined to suggest a flexible shoe assembly including a body having an "upper wearing surface;" "a lower mounting surface configured to engage a complementary surface within said molding system and providing positioning and adjustment of said shoe assembly during installation;" a force redirector "disposed in said body in a plane below said upper wearing surface and configured to redirect said force from a leading edge and a trailing edge of said upper wearing surface to a central area in said body;" and "at least one fixation bore extending lengthwise through a lower support of said body."

FINDINGS OF FACT

The record supports the following findings of fact ("FF") by a preponderance of the evidence.

1. Schlereth teaches a guide carriage and a bearing block for mounting a structural element such as a displaceable part of a machine tool for linear movement along a guide rail. (Schlereth, col. 1, ll. 49-53; col. 4, ll. 40-41 and col. 4, ll. 48-54).

2. The bearing block includes a pair of apparently coplanar slits defining a first bending web capable of bending along a first being axis parallel to the longitudinal axis of the guide rail (that is, parallel to the direction of linear movement). The bearing block also includes a pair of

apparently coplanar slits defining a second bending web capable of bending along a second bending axis which crosses the first bending axis perpendicularly. (Schlereth, col. 4, l. 54 – col. 5, l. 6 and Figs. 1 and 2).

3. Threaded bores appear to extend through a portion of the bearing block from an exposed clamping face down as far as the slits to clamp a displaceable part of a machine tool to the top of the bearing block. (Schlereth, col. 4, ll. 50-54 and Figs. 1 and 2).

4. Rows of load-transmitting balls are provided between the flanges of the guide carriage and associated lateral faces of the guide rail. (Schlereth, col. 5, ll. 25-30).

5. Osawa teaches an axially extending guide rail and a slider loosely and slidably fitted onto the guide rail. (Osawa, col. 2, ll. 29-41).

6. A sliding member formed of a thin plastic plate is bonded to the facing surfaces of the guide rail and the slider to fill the gap between the surfaces. (Osawa, col. 2, ll. 43-46). The sliding member preferably has a very small coefficient of friction so that the guide rail and the slider can be operated without lubrication. (Osawa, col. 4, ll. 29-34).

PRINCIPLES OF LAW

A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out factors to be considered in determining whether claimed subject matter would have been obvious:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id., 383 U.S. at 17.

ANALYSIS

A. *The Rejection of Claims 1, 7-11 and 27-33 Under Section 103(a) as Having Been Obvious Over Schlereth in View of Osawa*

The Examiner finds that Schlereth teaches all of the elements recited in independent claim 1 and its dependent claims 7-11 and 27-33 except the upper wearing surface. The Examiner further finds that:

> [i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the linear bearing of Schlereth with a linear bearing having a wear surface, as taught by Osawa, motivation being to reduce the number of components of the device thereby reducing the cost and assembly time of the device.

(Ans. 4).

The Appellants contend that there is no motivation to substitute Osawa's plastic sliding member (*see* FF 6) for the load-transmitting balls taught in Schlereth (*see* FF 4) because Osawa's sliding member would be less efficient. (App. Br. 22). The Appellants further argue that the

Examiner's rationale for modifying the guide carriage and bearing block taught by Schlereth is so vague that it "would permit any reference to be combined with any other reference in a 'pick-and-choose' hindsight approach that the courts have found legally improper." (App. Br. 24).

In *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 1741 (2007), the Supreme Court warned against confining the obviousness analysis "by a formalistic conception of the words teaching, suggestion, and motivation . . . ." The Court held that when an application "claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *Id.*, 127 S.Ct. at 1740. Here, one of ordinary skill in the art could have predicted that Osawa's sliding member would provide a low friction interface (even if perhaps not a *lower* friction interface) between the guide carriage and the guide rail if substituted for the rows of load-transmitting balls in Schlereth's flanges. The Examiner's proffer of market forces which might have driven this substitution, namely, reduction in the cost and assembly time of the device, reinforces our conclusion that the substitution would have been obvious. *See KSR Int'l*, 127 S.Ct. at 1741 (recognizing that market demand may drive design trends).

The Appellants also contend that there is no teaching or suggestion to invert Schlereth's guide carriage and bearing block so that the plastic sliding member substituted from Osawa presents an *upper* wearing surface and so that the force director is disposed in a plane *below* the upper mounting surface as recited in claim 1. (Reply Br. 4). We do not interpret claim 1 so as to require inversion of Schlereth's guide carriage and bearing block to

meet the limitations of the claim. "During examination, 'claims . . . are to be given their broadest reasonable interpretation consistent with the specification . . . ." *In re American Acad. of Science Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quoting *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990)). The present specification indicates that shoe assemblies may be oriented horizontally as well as vertically relative to the ground (*see* Spec. 13, l. 27 – 14, l. 12) and does limit the recited subject matter to so-called "bottom shoes" which are vertically oriented relative to the ground. Hence, we do not limit the terms "upper," "lower" and "below" as used in claim 1 as limiting the orientation of the recited shoe relative to the ground.

Instead, we interpret the words "upper," "lower" and "below" as used in claim 1 broadly to recite the orientation of the upper wear surface, the lower mounting surface and the force redirector relative to each other and to the supported member. Given this interpretation, the plastic sliding member of Schlereth's guide carriage as modified by the substitution of Osawa's sliding member would be an "upper wearing surface" relative to the guide rail even if the sliding member also faced the ground. The force redirector would be "below" the plastic sliding member in the sense that the force redirector would be farther from the guide rail than would be the "sliding member." When claim 1 is so construed, Schlereth's guide carriage and bearing block as modified in view of Osawa without inversion include an upper wearing surface and a force director disposed in a plane below the upper mounting surface as recited in claim 1.

The Appellants contend that Schlereth's guide carriage and bearing block as modified by the substitution of Osawa's sliding member would not have a force redirector "configured to redirect said force from a leading edge

and a trailing edge of said upper wearing surface to a central area in said body" because the guide rail would not apply a force to the leading or trailing edge of the upper wearing surface (that is, the plastic sliding member substituted from Osawa) which the force redirector shifts to a central area of the body. (Reply Br. 6). We interpret the language "configured to redirect said force from a leading edge and a trailing edge of said upper wearing surface to a central area in said body" as being broad enough to read on the force redirector of at least one of the preferred embodiments appearing in the drawings of the present application. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 2008) (claims typically are not interpreted to exclude the embodiments disclosed in the specification absent highly persuasive evidence to the contrary). The slots taught by Schlereth appear to be configured essentially identically to each of the force redirectors appearing in the present application. In addition, the slots taught by Schlereth appear to be "configured to redirect said force from a leading edge and a trailing edge of said upper wearing surface to a central area in said body" in the same way that each of the force redirectors appearing in the present application redirects such force. (*Compare* Spec. 17, ll. 21-24 and 18, ll. 2-10 *with* FF 2). Hence, Schlereth and Osawa teach a force redirector "configured to redirect said force from a leading edge and a trailing edge of said upper wearing surface to a central area in said body" as that phrase is used in claim 1.

Finally, the Appellants contend that Schlereth fails to teach "a lower mounting surface configured to engage a complementary surface within said molding system and providing positioning and adjustment of said shoe assembly during installation." (App. Br. 18). The exposed clamping surface

of the bearing block is configured to engage a complementary flat surface. The threaded bores through the exposed clamping surface (*see* FF 3) are part of the configuration of the clamping surface and would provide positioning and adjustment of the assembly during a putative installation.

On the record before us, the Appellants have not shown that the Examiner erred in rejecting claim 1 under section 103(a) as being unpatentable over Schlereth and Osawa. The Appellants have not presented any arguments suggesting that dependent claims 7-11 and 27-33 might be patentable if claim 1 were not. Therefore, the Appellants also have not shown that the Examiner erred in rejecting dependent claims 7-11 and 27-33 as being unpatentable over Schlereth and Osawa.

B. The Rejection of Claim 34 Under Section 103(a) as Having Been Obvious Over Schlereth in View of Osawa

The Appellants support their contention that claim 34 is patentable solely by reference to arguments in support of the patentability of claim 1. (App. Br. 20-21). For the reasons given in the previous section of the opinion, we conclude that the Appellants have not shown that the Examiner erred in rejecting claim 34 as being unpatentable over Schlereth and Osawa.

C. The Rejection of Claim 35 Under Section 103(a) as Having Been Obvious Over Schlereth in View of Osawa

Claim 35 recites a flexible shoe assembly having a body including "at least one fixation bore extending lengthwise through a lower support of said body." The Appellants contend that Schlereth and Osawa do not teach an assembly with a bore extending *lengthwise* through a body of the assembly. The present specification uses the term "lengthwise" consistently to refer to

a direction parallel to that of linear movement of the supported member. (*E.g.*, Spec. 14, l. 1; 19, l. 21; 20, l. 25; and 23, l. 30). Since the term "lengthwise" is used in this context consistently through the specification, we interpret the term as used in claim 35 in the same context. As the Appellants point out (App. Br. 21; Reply Br. 7), the Examiner has not identified any teaching in Schlereth and Osawa which would suggest a bore in a direction parallel to that of linear movement. The Appellants have shown that the Examiner erred in rejecting claims 35 under section 103(a).

CONCLUSIONS OF LAW

On the record before us, the Appellants have not shown that the Examiner erred in rejecting claims 1, 7-11 and 27-34 as being unpatentable over Schlereth in view of Osawa. The Appellants have shown that the Examiner erred in rejecting claim 35 as being unpatentable over those references.

DECISION

We affirm the Examiner's rejection of claims 1, 7-11 and 27-34. We reverse the Examiner's rejection of claim 35.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN-PART

jlb

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